

Title of the invention  
A protective garment for a patient

Cross-reference to related application

5                   This application claims the benefit of U.S. Provisional patent application serial no. 60/421,523, filed October 26, 2002 entitled Garment for invalid.

Background of the Invention

Field of the invention: The present invention relates, in general, to

10   garments worn by patients for use by caregivers to manipulate the patient and, more particularly, the instant invention relates to the design of such garments having connecting portions to mount the garment on a patient and handholds for moving or positioning the patient.

Description of the prior art: Many of the challenges of caring for patients

15   including, for example, invalids is that of moving or positioning the patients who may be paralyzed or otherwise too weak due to a sickness to position themselves in a bed or furniture for seating. For example, bedridden patients generally required frequent turning to prevent the onset of bedsores in concentrated load bearing areas. Feeble patients require the help of a caregiver to transfer the patient into and out of a bed, a chair, a

20   wheelchair and a car. A post-surgical patient generally benefit or require periods of time for sitting in a generally upright position to prevent an onset of pneumonia. A patient who is placed in a sitting upright position in bed may tend to slide downward in the bed and require repositioning by a caregiver to reestablish the desired upright position in the bed. A patient in bed may need to be moved forwardly by a caregiver for positioning

25   pillows. A patient undergoing physical therapy may need to be positioned appropriately for the therapy. Patients may be physically hard to move due to their weight and bulk,

and it may be difficult to protect patients from injury due to brittle bones, and/or fragile skin.

In response to this need, my earlier United States Patent 6,230,329 entitled Invalid support garment disclosed handholds in a garment for use by a caregiver to move  
5 or position the patient. Various other prior art patents teach garments having handles, these known patents comprise United States Patent 6,167,572 entitled Reinforced garment with looped grasping handles discloses garment pants having handles to be used by a dance partner. United States Patent 4,449,253 entitled Quick evacuation fireman's coat discloses a fireman's coat having straps so that a fireman who has been injured or  
10 overcome by heat or smoke can be evacuated by another fireman by the use of the straps. United States Patent 5,369,804 entitled Infant's garment with safety feature disclosed a body suit used as a wrap around an infant and presenting handles on the garment for quickly moving the infant to safety.

#### Objects of the invention

15 It is therefore one of the primary objects of the present invention to facilitate the process of moving or positioning a weak or paralyzed patient.

Another object of the present invention is to provide a garment for a weak or paralyzed patient, the garment having handholds to facilitate moving or positioning the patient.

20 Still another object of the present invention is to provide a garment for a weak or paralyzed patient, the garment having handholds with rigid portions to protect a care giver's hands.

Yet another object of the present invention is to provide a garment for moving or positioning a male patient, the garment having a bifurcate portion for passing through the crotch of the patient to prevent discomfort.

A further object of the present invention is to provide, for a weak or  
5 paralyzed patient, a garment having separate top and bottom portions, the portions having handholds to facilitate moving or positioning the patient.

It is an additional object of the present invention to provide, for a weak or paralyzed male patient, a bottom garment having handholds and a bifurcate portion passing through the crotch of the patient to prevent discomfort.

10 Still yet, another object of the present invention is to provide, for a weak or paralyzed male patient, a bottom garment having handholds and a bifurcate portion passing through the crotch of the patient to prevent discomfort, the bifurcate portion including a pair of tail portions.

Yet still another object of the present invention is to provide, for a weak or  
15 paralyzed patient, a top garment having handholds on the front to facilitate moving the patient forward to position pillows.

A still further object of the present invention is to provide a rigid handhold for a garment for a weak or paralyzed patient. The rigid handhold is for improving the grip of a caregiver when moving or positioning the patient.

20 Summary of the invention

According to one aspect of the present invention, there is provided a garment used by a caregiver wherein the garment includes a garment body including front garment portion and a back garment portion constructed and arranged for traversing

front and back areas of the patient from at least a waist line area of the patient, means  
formed on the garment body including a plurality of extended garment portions movable  
into positions to cover at least part a patient and forming a garment body interconnection  
between the front garment portion and the back garment portion, the plurality of extended  
5 garment portions having lengths sufficient to anchor the front and back garment portions  
in at least one direction perpendicular to the waist line area of the patient, and a plurality  
of handholds on the a garment body for use by a caregiver to manipulate the patient.

In another aspect, the present invention provides a garment used by  
a caregiver wherein the garment comprising a garment body including front portion and a  
10 back portion at least partially covering a patient, and a plurality of handholds including at  
least one rigid member in the garment body for improving a grip by a caregiver to  
manipulate a patient.

#### Brief description of the several views of the drawings

In addition to the various objects and advantages of the present invention  
15 which have been generally described above, there will be various other objects and  
advantages of the invention that will become more readily apparent to those persons who  
are skilled in the relevant art from the following detailed description of the invention, is  
read in light of the accompanying drawings in which:

Figure 1 is a perspective illustration of a male patient wearing a  
20 double-tailed body suit having handholds according to an embodiment of the present  
invention;

Figure 2 is a pattern for a back portion of a double-tailed body suit having  
handholds according to an embodiment of the present invention;

Figure 3 is a pattern for a front chest portion of a double-tailed body suit for the embodiment shown in Figure 2;

Figure 4 is a pattern for a plurality of reinforcing patches for the handholds on the patterns shown in Figures 2 and 3;

5                    Figure 5A is a front view of a top garment according to an embodiment of the present invention;

Figure 5B is a back view of the top garment shown in Figure 5A;

Figure 6A is a front pattern portion for the top garment shown in Figures 5A and 5B;

10                  Figure 6B is a back pattern portion for the top garment shown in Figures 5A and 5B;

Figure 7A is a front view of a double tail bottom garment according to an embodiment of the present invention;

Figure 7B is a back view of the double tail bottom garment shown in

15                  Figure 7A;

Figure 8A is a front pattern portion for the double tail bottom garment shown in Figures 7A and 7B;

Figure 8B is a back pattern portion for the double tail bottom garment shown in Figures 7A and 7B;

20                  Figure 9A is a front view of a long leg bottom garment according to an embodiment of the present invention;

Figure 9B is a back view of the long leg bottom garment shown in Figure 9A;

Figure 10A is a front pattern portion for the long leg bottom garment shown in Figures 9A and 9B;

Figure 10 B is a back pattern portion for the long leg bottom shown in Figures 9A and 9B;

5                    Figure 11A is a front view of a single tail bottom garment according to an embodiment of the present invention;

Figure 11B is a back view of the single tail bottom garment shown in Figure 11A;

10                   Figure 12A is a front pattern portion for the single tail bottom garment shown in Figures 11A and 11B;

Figure 12B is a back pattern portion for the single tail bottom garment shown in Figures 11A and 11B;

Figure 13A is an illustration of a handhold comprising a pair of parallel openings defining a grip strap there between;

15                   Figure 13B is an illustration of a handhold similar to that shown in Figure 13A, but further including a reinforcing patch;

Figure 14 is an illustration of a rigid handhold including a rod having rounded or chamfered ends;

20                   Figure 15 is a sectional view taken along line 15-15 of the rigid handhold shown in Figure 14;

Figure 16 shows the rod position on the fabric prior to forming the handhold shown in Figure 14;

Figure 17 is a sectional view taken along lines 17-17 of the arrangement shown in Figure 16;

Figure 18 is a view of a pair of openings for a handhold cut in the fabric of a garment according to the present invention;

5                    Figure 19 is a patch for reinforcing one of the openings shown in Figure 18;

Figure 20 is a patch for reinforcing one of the openings shown in Figure 18;

10                   Figure 21 is a handhold made by attaching the patches shown in Figures 19 and 20 to the fabric shown in Figure 18;

Figure 22 is an isometric illustration of a reinforced attachment for a handgrip forming part of the garment of the present invention; and

Figure 23 is a sectional view taken along lines 23-23 of Figure 22.

#### Detailed description of the invention

15                   According to one aspect of the present invention, as shown in Figure 1 there is provided a garment 10 used by a caregiver to manipulate the patient, illustrated and identified by reference numeral 12. The garment 10 includes a garment body 14 including front garment portion 10F and a back garment portion 10B constructed and arranged for traversing front area 12F and back area 12B of the patient from at least a  
20                   waist line area 12W of the patient. The garment body 14 is provided with extended garment portions 16, 18 and 24 movable into positions to cover e.g. traverse at least part a patient and forming a garment body interconnection between the front garment portion 10F and the back garment portion 10B. The extended garment portions 16, 18 and 24

have lengths sufficient to anchor the front and back garment portions about the garment waist area 10W in at least one direction perpendicular to the waist line area 12W of the patient. The waist line area 12W corresponds substantially to the waist line area 10W of the garment 10. In some embodiments of the present invention, the garment is comprised of only an upper portion extending from the waist line area 10W to the extended garment portion 24 and in other instances the garment is comprised of only a lower portion extending from the waist line area 10W to the portions 16 and 18. The portions 16 and 18 in the embodiment shown in Figure 1 take the form of a right tail portion and a left tail portion passing through the groin area i.e. crotch of the patient. In other embodiments described hereinafter the portions 16 and 18 take the form of trouser leg portions preferably with a releasable leg closure structure extending about the inseam of the trouser. The portions 24 take the form of shoulder strap portions traversing the trapezius of the patient. The garment body is provided with a plurality of handholds 32, 35, 36, 38, 40 and 140 dimensioned and arranged to allow a caregiver to establish a positive load transferring grip of the garment in the area immediately surrounding the handhold. The handholds 32, 35, 36, 38, 40 and 140 are strategically disbursed about the front and back portions of the garment to aid use by a caregiver to manipulate the patient. In another aspect of the present invention as shown in Figures 14 and 15 provides the handholds including at least one rigid member 92 in the garment body for improving a grip by a caregiver to manipulate a patient.

In Figure 1 the patient is nominally designated as a male patient. Figures 2 and 3 illustrate patterns for a garment, generally designated 20 which is similar to garment 10. The front of a garment formed by pattern 20 is formed as a vest. A garment



10 according to the pattern 20 includes a left tail portion 16 having distal end 17 and a right tail portion 18 having distal end 19. According to the pattern 20 when garment 10 is placed on a male patient 12, left tail portion 16 and right tail portion 18 are drawn through crotch 13 of the male patient 12. Left tail portion 16 is positioned to the left of the genitals of male patient 12 and right tail portion is positioned to the right of the genitals of male patient 12. For garment 10, left tail portion 16 and right tail portion 18 are attached to attachment devices 22. It is presently preferred that attachment devices 22 be loops. Preferably, distal end 17 of left tail portion 16 is drawn through the left loop 22 and attached back on itself by hook and loop fasteners (not shown), of which Velcro is a well known brand name. Likewise, distal end 19 of right tail portion 18 is drawn through the right loop 22 and attached back on itself by hook and loop fasteners (not shown). For garment pattern 20, left tail portion 16 and right tail portion 18 are drawn through fastening devices 154 and fastened back on themselves. It is presently preferred that fastening devices 154 be reinforced openings. Garment pattern 20 also includes bottom edge handholds 152.

Garments 10 produced according to pattern 20 has shoulder straps 24 having handholds 32. Preferably, shoulder strap handholds 32 comprise epaulettes. Preferably, garment 10 and pattern 20 further comprise upper front handholds 36, and garment 10 has armhole handholds 35 adjacent armholes 54. Garment 10 further includes lower front handholds 38. Garment pattern 20 further includes upper front handholds 150 and nape handhold 155. Handholds 36 and 38 are formed as openings cut in garment 10 on opposite sides of front closure 15. Garments 10 and 20 also comprise upper side handholds 40. Garment 10 further comprises lower side handholds 140

disposed adjacent bottom edge 11 of garment 10. In the embodiments illustrated, handholds 36, 38 40, 42, 150 and 156 each comprise parallel openings defining a strap there between. A preferred construction of these handholds is shown in Figures 13A and 13B. Figure 4 illustrates a plurality of reinforcing patches 48, which are applied around the openings 45 shown in Figure 13A, as illustrated in Figure 13B. Reinforcing patches 48 may include padding (not shown) in the back and side garment grips with fiber, synthetic padding or gel when desired to protect the hand of the caregiver and skin of the patient.

A variety of fabrics may be employed for unitary body 14 of garment 10. Unitary body 14 may be formed of a soft, quilted fabric for a male patient 12 who generally remains in bed. Alternatively, unitary body 14 of garment 10 may be formed of a non-stretch performance or sport fabric for a patient in physical therapy, and for partial weight bearing patients. Mesh fabric may be used for disposable garments.

Figures 5A and 5B are front and back views, respectively, of a patient 51 wearing an upper garment 50. Figures 6A and 6B show patterns for the upper garment 50. Upper garment 50 has arm holes 54 and a hole 52 for the neck of patient 51. Garment 50 has handholds 40 on sides thereof and upper front handholds 136. Garment 50 also has left and right shoulder strap handholds 32. It also has back handholds 42.

Figures 7A and 7B are front back views, respectively of a lower garment 60 for a male patient 12 (shown in Figure 1). Figures 8A and 8B are front and back patterns for lower garment 60. Lower garment 60 has a left tail portion 16 and a right tail portion 18, and is similar, in this regard to the garment 10 illustrated in Figure 1. Lower garment 60 has handholds 38, 40 and 42 for positioning or moving male patient 12.

Figures 9A and 9B are front and back views, respectively, of a lower garment 70 for a male patient 12 (shown in Figure 1). Figures 10A and 10B are front and back patterns for lower garment 70. Lower garment 70 is formed as short trousers having waist handholds 138, and back waist handhold 142, as well as additional handholds 43 located on thigh portions of lower garment 70. Lower garment 70 has a cutout 72 in the crotch area to prevent compression of genital organs of male patient 12. An undergarment 74, which in this embodiment is sweat shorts, is visible in Figures 9A and 9B. In its presently preferred embodiment, lower garment 70 is openable along inseam 76 to facilitate removal of undergarment 74 for toileting. Lower garment 70 is also re closeable along inseam 76 by devices such as hooks, snaps, zippers or hook and loop fasteners such as Velcro. It is anticipated that the toilet will have grab bars. The patient will be lowered onto the toilet with the garment 70 in place. The patient will then rock or tilt to left and right as a caregiver removes the subsequently replaces undergarment 74 and re closes inseam 76.

Figures 11A and 11B are front and back views, respectively, of a lower garment 80 for a female patient. Figures 12A and 12B are front and back patters for lower garment 80. Lower garment 80 has waist handholds 138 and 142 as well as lower side handholds 140 for positioning or moving the female patient. Lower garment 80 has a single tail 82 shown in Figures 11A and 12B. Garment 80 may have a stretch fabric panel insert for comfort in the crotch. (Not Shown). Panel may also be bifurcated for easier toileting.

Figure 13A shows a handhold 44 that may be employed at any location on any embodiment of this invention. Handhold 44 includes parallel openings 45 cut in

fabric 100. Parallel openings 45 define strap 47 there between. Preferably, handhold 44 includes stitching 46 to strengthen handhold 44. Bartack stitching can be used, as necessary, for reinforcement throughout any garment according to the present invention.

Figure 13B illustrates reinforced handhold 144 wherein a reinforcing patch 48 having parallel openings 145 defining strap 147 there between is added to handhold 44 and attached thereto by reinforcing stitching 146. Patterns for reinforcing patches 48 are shown in Figure 4. Studs 149 of the type employed around the pockets of jeans, may be employed to further strengthen handhold 144. Bartack stitching, which is well known in the art, may alternatively be used.

Figures 14 and 15 illustrate an alternative handhold 90 that is generally employable on front portions or sides of garments. Handhold 90 includes a rigid member, preferably a rod 92 having rounded or chamfered end 94. Figure 14 is a view of handhold 90 assembled and Figure 15 illustrates section 15-15 in Figure 14.

Figures 16 and 17 illustrate fabrication of handhold 90. The fabric 100 has a linear opening 45 and a three-sided cut 96 defining a flap 98. Rod 92 having rounded or chamfered ends 94 is placed on fabric 100. Flap 98 is then wrapped around rod 92 to enclose rod 92 and attached by stitching 46. To use handhold 90, a caregiver inserts his or her hand through opening 99, around rod 92 and brings his or her fingers back out of opening 45 to have a good grip on handhold 90. A lingerie bone, a plastic dowel, or a wooded dowel is possible alternatives for the rigid member, here shown as rod 92. Generally, a handhold such as handhold 90 having a rigid member would not be employed on a back portion of a garment because it would be uncomfortable for the

patient. For back portion padding alternatives for rigid member may be synthetic padding, natural fiber or gel.

Figures 18-21 illustrate a handhold having exceptional strength. Figure 18 shows openings 160 cut in the fabric 100, leaving a strap 162 there between. Figure 19 illustrates a rectangular patch 165 having opening 168 cut in fabric rectangle 170. Patch 165 has right side portions 169. Figure 20 illustrates a rectangular patch 166 having opening 168 cut in fabric rectangle 170. Patch 166 has left side portion 171. Figure 21 illustrates a completed handhold 175 wherein patches 166 and 165 are sewn, in that order, to fabric 100. Opening 168 in patch 166 is aligned with the right one of openings 160 and opening 168 in patch 165 is aligned with the left one of openings 160. Left side portion 171 of patch 166 is laid over strap 162 and the right side portion 169 of patch 165 is laid over left side portion 171 of patch 166, so that there is one layer of material 100 and two layers of the material of fabric rectangle 170 between openings 160 of handhold 175. Patches 165 and 166 are preferably attached by stitching (not shown).

Figures 22 and 23 illustrate a releasable reinforcement 200 for a handhold such as handhold 144 for application at the desecration of the caregiver. The releasable reinforcement 200 includes a two ply layer of fabric 201 and 202 sewn about the outer peripheral edge and receiving elongated strips of a Velcro hook patch of 204 and Velcro pile patch 205 at opposite facing marginal ends of the layered fabric. An elongated cylinder 206 is interposed in a pocket formed between the layers 201 and 202 at the central mid portion of the layers of fabric. The elongated cylinder 206 forms a reinforcing member and is comprised of material selected from the group consisting of dowel, synthetic fabric, natural fiber, or gel.

A variety of handholds may be employed for garments of the present invention, handhold 44 and handhold 90 being examples. Filler may be added to handholds as padding to protect the caregiver's hand or patient's skin. Filler may be synthetic or natural fiber. One type of alternative handhold would be formed of synthetic webbing, (not shown). Another type would be cord type, as is commonly employed on mattresses. A skid resistant fabric may be employed on a handhold to facilitate gripping the handhold. Generally, in any of the places where fastening means are needed, hooks, buckles, snaps, zippers or Velcro may be employed. Garments involving one or two tail portions for passing through the crotch of a patient in front may be secured by fastening means attached to a band similar to an abdominal binder, but generally lacking elasticity.

While the present invention has been described in connection with the preferred embodiments of the various figures, it is to be understood that other similar embodiments may be used or modifications and additions may be made to the described embodiment for performing the same function of the present invention without deviating therefrom. Therefore, the present invention should not be limited to any single embodiment, but rather construed in breadth and scope in accordance with the recitation of the appended claims.